

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (Currently Amended): Maraged steel with improved machinability, good weldability, and high corrosion resistance, containing (in % by weight)

0.02 - 0.075 % carbon;

0.1 - 0.6 % silicon;

0.5 - 0.95 % manganese;

0.08 - 0.25 % sulfur;

phosphorus present up to a maximum of 0.04 %;

12.4 - 15.2 % chromium;

0.05 - 1.0 % molybdenum;

0.35 - 1.8 % nickel;

vanadium present up to a maximum of 0.15 %;

0.1 - 0.45 % copper;

aluminum present up to a maximum of 0.03 %;

0.02 - 0.08 % nitrogen; and

residual iron, and impurities caused in manufacturing, which steel has a ferrite percentage of less than 10 % by volume, wherein said maraged steel has been subjected to an annealing treatment for formation and adjustment of the ferrite percentage in the steel, thereafter hot formed with an at

least 4-fold degree of deformation, thereafter soft annealed, and thermally tempered with at least one hardness treatment and at least one draw treatment.

Claim 2 (Original): The steel according to claim 1 further including at least one additional alloying element up to a maximum of 2.0 % by weight.

Claim 3 (Original): The steel according to claim 1 containing 0.80 - 0.90 % manganese and 0.10 - 0.16 % sulfur.

Claim 4 (Original): The steel according to claim 1 containing 13.8 - 15.0 % chromium.

Claim 5 (Original): The steel according to claim 1 containing 14.1 - 14.7 % chromium.

Claim 6 (Canceled)

Claim 7 (Canceled)

Claim 8 (Original): The steel according to claim 1 containing 0.35 - 1.1 % nickel.

Claim 9 (Original): The steel according to claim 4 containing 0.35 - 1.1 % nickel.

Claim 10 (Original): The steel according to claim 1 containing 0.8 - 1.0 % nickel.

Claim 11 (Original): The steel according to claim 4 containing 0.8 - 1.0 % nickel.

Claim 12 (Original): The steel according to claim 1 containing 0.25 - 0.35 % copper.

Claim 13 (Previously Presented): The steel according to claim 9 containing 0.25 - 0.35 % copper.

Claim 14 (Original): The steel according to claim 9 containing 0.25 - 0.35 % copper.

Claim 15 (Original): The steel according to claim 11 containing 0.25 - 0.35 % copper.

Claim 16 (Canceled):

Claim 17 (Canceled):

Claim 18 (Original): The steel according to claim 1 comprising a ferrite percentage of up to 6 % by volume.

Claim 19 (Previously Presented): A process for heat treatment of a maraging steel with improved machinability, which process produces an object that is through-hardened even with a large cross-section, comprising subjecting a steel block with a composition (in % by weight) of

0.02 - 0.075 % carbon;

0.1 - 0.6 % silicon;

0.5 - 0.95 % manganese;

0.08 - 0.25 % sulfur;

phosphorus present up to a maximum of 0.04 %;

12.4 - 15.2 % chromium;

0.05 - 1.0 % molybdenum;

0.2 - 1.8 % nickel;

vanadium present up to a maximum of 0.15 %;

0.1 - 0.45 % copper;

aluminum present up to a maximum of 0.03 %;

0.02 - 0.08 % nitrogen; and

residual iron, and impurities caused in manufacturing,

to an annealing treatment for formation and adjustment of a ferrite percentage in the steel, the annealing treatment for the formation and adjustment of a ferrite percentage being performed between 1080°C and 1350°C for at least 12 hours;

thereafter hot forming with an at least 4-fold degree of deformation;

thereafter soft annealing; and

thermal tempering with at least one hardness treatment and at least one draw treatment.

Claim 20 (Canceled)

Claim 21 (Previously Presented): The process according to claim 19 wherein the annealing treatment is performed for at least 24 hours.

Claim 22 (Original): The process according to claim 19 wherein the annealing treatment provides a ferrite content up to a maximum of 28 % by volume.

Claim 23 (Original): The process according to claim 19 wherein the annealing treatment provides a ferrite content up to a maximum of 15 % by volume.

Claim 24 (Original): The process according to claim 19 wherein the annealing treatment provides a ferrite content up to a maximum of 10 % by volume.

Claim 25 (Original): The process according to claim 19 wherein the annealing treatment provides a ferrite content up to a maximum of 6 % by volume.

Claim 26 (Original): The process according to claim 19 wherein the steel (in % by weight) contains at least one of 13.8 - 15.0 % chromium and 0.25 - 1.6 % nickel.

Claim 27 (Original): The process according to claim 26 wherein the steel (in % by weight) contains 14.1 - 14.7 % chromium.

Claim 28 (Original): The process according to claim 26 wherein the steel (in % by weight) contains 0.35 - 1.1 % nickel.

Claim 29 (Original): The process according to claim 26 wherein the steel (in % by weight) contains 0.8 - 1.0 %, nickel.

Claim 30 (Original): The process according to claim 27 wherein the steel (in % by weight) contains 0.35 - 1.1 % nickel.

Claim 31 (Original): The process according to claim 27 wherein the steel (in % by weight) contains 0.8 - 1.0 %, nickel.

Claim 32 (Original): The process according to claim 19 wherein the steel contains 0.25 - 0.35 % by weight copper.

Claim 33 (Original): The process according to claim 19 wherein the steel includes at least one additional alloying element up to a maximum of 2.0 % by weight.

Claim 34 (Original): A frame construction for plastic molds comprising the steel according to claim 1.

Claim 35 (Original): A forged piece with a thickness of at least 0.32 m and a cross-sectional area of at least 0.1 m², heat-treated according to the process recited in claim 19.

Claim 36 (Original): A mold part fabricated by machining, said mold part comprising a steel according to claim 1.

Claim 37 (Original): A mold part fabricated by machining, said mold part comprising a steel produced by the process recited in claim 19.